REMARKS

In response to the Office Action of July 5, 2002, Applicants have carefully considered the rejections of the Examiner in the above-identified application. In light of this consideration, Applicants believe that the claims, as now amended, are allowable. Applicants respectfully request reconsideration of the rejection of the claims now pending in the application.

In this first Office Action of July 5, 2002, claims 7 and 15, are rejected under 35 U.S.C. §112 as containing subject matter not described in the specification. Claims 1-8 are rejected under 35 U.S.C. §112 as being as being indefinite. Claim 3 is objected to. Claims 1-16 are rejected under 35 U.S.C. §103(a) as being unpatentable over combined teachings of Dermer et al., U.S. Patent No. 5,313,570, (hereinafter Dermer) and Fukuda et al. U.S. Patent No. 5,867,593 (hereinafter Fukuda).

The Examiner has rejected claims 7 and 15 under 35 U.S.C. §112 as containing subject matter not described in the specification. Claims 7 and 15 have been canceled.

The Examiner has rejected 1-8 under 35 U.S.C. §112 as being as being indefinite. Claim 1 has been amended and is now believe to overcome the Examiner's rejection.

The Examiner has objected to claim 3. Claim 3 has been amended in a manner responsive to the Examiner's objection.

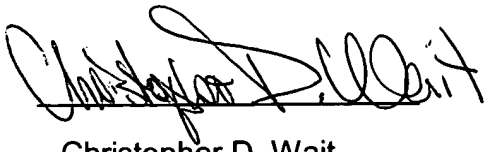
The Examiner has rejected claims 1-16 under 35 U.S.C. §103(a) as being unpatentable over combined teachings of Dermer, and Fukuda. The Applicants believe the claims as now amended overcome these references. Dermer teaches the compensation for misregistration of printing plates by determining the boundaries between regions of color. As such it is attacking the

problem of blooming or halo artifacts by finding boundaries of color areas/regions. The Applicant's invention is concerned with the proper delineation for a plethora of documents, snapshots, etc. all laid upon a smart platen for simultaneous input with a single scan. As such the invention is directed to delineating the boundaries of those snapshots etc. by using bin lists as first approximations of where these boundaries are when confused by a picture/document background similar to a platen background. Neither Dermer or Fukuda teach bin lists. Nor is there any suggestion to combine the two references. Reconsideration of claims 1 and 9 as now amended is respectfully requested.

The Examiner has rejected claims 2-8 and 10-16 as as being unpatentable over combined teachings of Dermer, and Fukuda. As claims 2-8, and 10-16, depend from claims deemed allowable, they should be allowable as well. Allowance of claims 2-8 and 10-16 are respectfully requested.

It is respectfully submitted that the present set of claims as now amended are patentably distinct over the cited references. In the event the Examiner considers personal contact advantageous to the disposition of this case, she is hereby requested to call the undersigned attorney at (585) 423-6918, Rochester, NY.

Respectfully submitted,



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October 7, 2002
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Red-lined Drawings and Finals

VERSION WITH MARKINGS TO SHOW CHANGES MADE:

IN THE SPECIFICATION:

Amend paragraph on page 6, beginning at line 23:

The term "data" refers herein to physical signals that indicate or include information. When an item of data can indicate one of a number of possible alternatives, the item of data has one of a number of "values." For example, a binary item of data, also referred to as a "bit," has one of two values, interchangeably referred to as "1" and "0" or "ON" and "OFF" or "high" and "low." A bit is an "inverse" of another bit if the two bits have different values. An N-bit item of data has one of ~~2N~~ 2^N values. A "multi-bit" item of data is an item of data that includes more than one bit.

Amend paragraph on page 11, beginning at line15:

As depicted by the flowcharts of Figures 5and 6, the object location step 100 is performed by first identifying the background region of the input image 102, characterizing the background region 104, and then using the characteristic of the background region as a seed, identifying all the pixels representing the background region with an adaptive seed fill algorithm 106. Background pixels are pixels not associated with any objects, or more simply, they are pixels representative of those regions lying outside of the objects, the values of which are controlled by the "background" against which the objects are placed during scanning (e.g., the underside of the platen cover). One embodiment employs the average color of a small region in the upper left-hand corner of the scanned image as an initial estimate of the background color. Alternatively, other sampling operations may be employed to determine the background color as described, for example, in US-A-~~5,282,091~~5,282,061 for a

Programmable Apparatus for Determining Document Background Level by Farrell.

Amend paragraph on page 15, beginning at line 1:

After the data reduction, at step 420 of Figure ~~6~~7, an estimation of the angle of the line passing through each remaining point on the contour is preformed. As shown in Figure 7, a modified linear regression in a particular window (W) centered on each point is performed so as to estimate an angle of the line passing through each remaining point of the contour determined by the set of data points. Initially a modified linear regression is done on a small window centered on a point (A) where each linear regression requires a series of additions, multiplication's, and arc tangent calculations.

Amend paragraph on page 15, beginning at line 9:

In particular, a standard regression algorithm fits data to the line y=mx+k. However, using a standard regression algorithm to perform these functions can lead to erratic results as the line approaches a vertical. Therefore, in the present invention, the algorithm is modified so as to account for these erratic results. As shown in Figure 8 in each of the four quadrants indicated therein, a standard regression is used for the lines that are more horizontal in two quadrants with a slope between -45° and +45°. When the slope is not in the identified degrees, that is, when the lines are more vertical with a slope greater than 45° and in the other two quadrants, an inverted linear regression based on the inverted linear equations ~~x=1/ny-k/m~~x=1/my-k/m is performed. The slope angle is determined from the following equations:

Amend paragraph on page 15, beginning at line 26:

Once the slope calculation are accomplished, at step 430 of ~~figure 6~~Figure 7, each point associated with an angle is categorized by performing a bin categorizing operation to generate a series of bins. For example, as shown in Figure 9, bins B1, B2, B3, and B4... are generated from a series of angles, which are associated with each point. The object of step 430 is to categorize groups of adjacent boundary points that share a common slope, i.e. convert the list of boundary points into a sequence of bins (B1, B2, B3...) where each of the bins consists of a set of collinear points so as to generate a boundary of an image made up of a set of straight line segments.

Amend paragraph on page 21, beginning at line 14:

~~Overlap + = Maximum $P1_{xmin}$, $P2_{xmin}$)~~Overlap = Maximum ($P1_{xmin}$, $P2_{xmin}$) - Minimum ($P1_{Xmax}$, $P2_{Xmax}$) + 1 (step 870)

IN THE CLAIMS:

1. (Amended) A method for processing multiple ~~digital~~ structured images using an imaging input device with smart platen so as to reduce bleeding of edges of ~~the~~ multiple digital images arranged upon the smart platen by determining the boundaries of each of the multiple digital images, comprising:

generating bin lists;

detecting a boundary of a first image from the bin list;

detecting a boundary of a second image from the bin list;

determining an overlap between the detected boundaries of the first image and second images; and,

~~and~~ modeling a third image from the calculated overlap of the first and second images wherein the third image contains at least said first and second images and represents a depiction of said first and second images without an overlap between said first and second images. ~~;~~

~~calculating the overlap between the first and second images~~

3. (Amended) The method according to **claim 1**, comprising:

wherein the step of determining an overlap of the first and second images uses a minimum threshold value in ~~a~~ at least an X-axial direction for the first and second images.

9. (Amended) A method for processing multiple ~~digital~~ structured images using an imaging input device with smart platen so as to reduce bleeding of contour edges of ~~the~~ multiple digital images arranged upon the smart platen by generating an object defined by contour edges of particular sets of the multiple digital images, comprising:

generating bin lists;

detecting a set of edges of a first object from the bin list;

detecting a set of edges of a second object from the bin list;

determining an overlap between the detected set of edges of the first and second objects;

calculating the overlap between the set of edges of the first and second objects; and

modeling a third object by ascertaining the calculated overlap of the first and second objects wherein the third object contains at least said first and second objects without an overlap of the set of edges of the first and second objects.

Claims 7 and 15 have been cancelled.

Approved.
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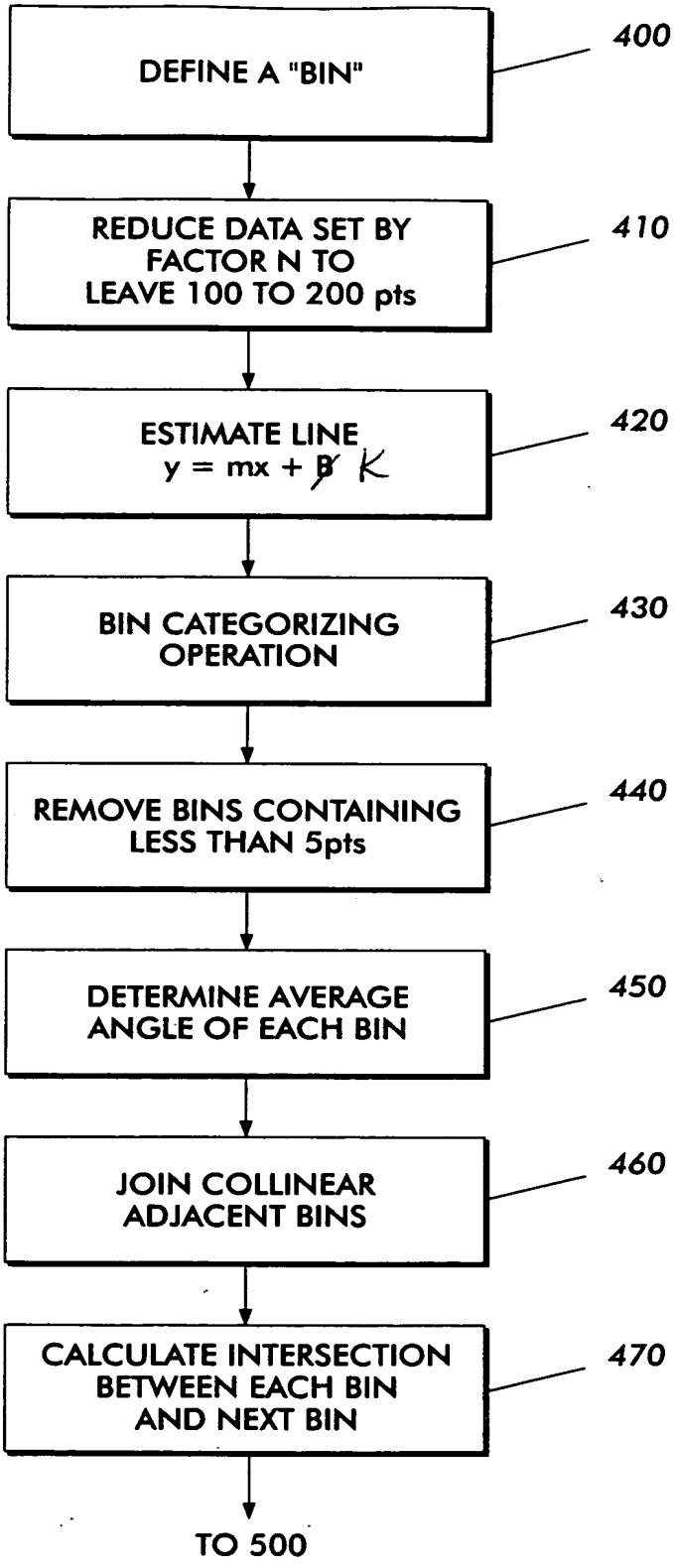

FIG. 7

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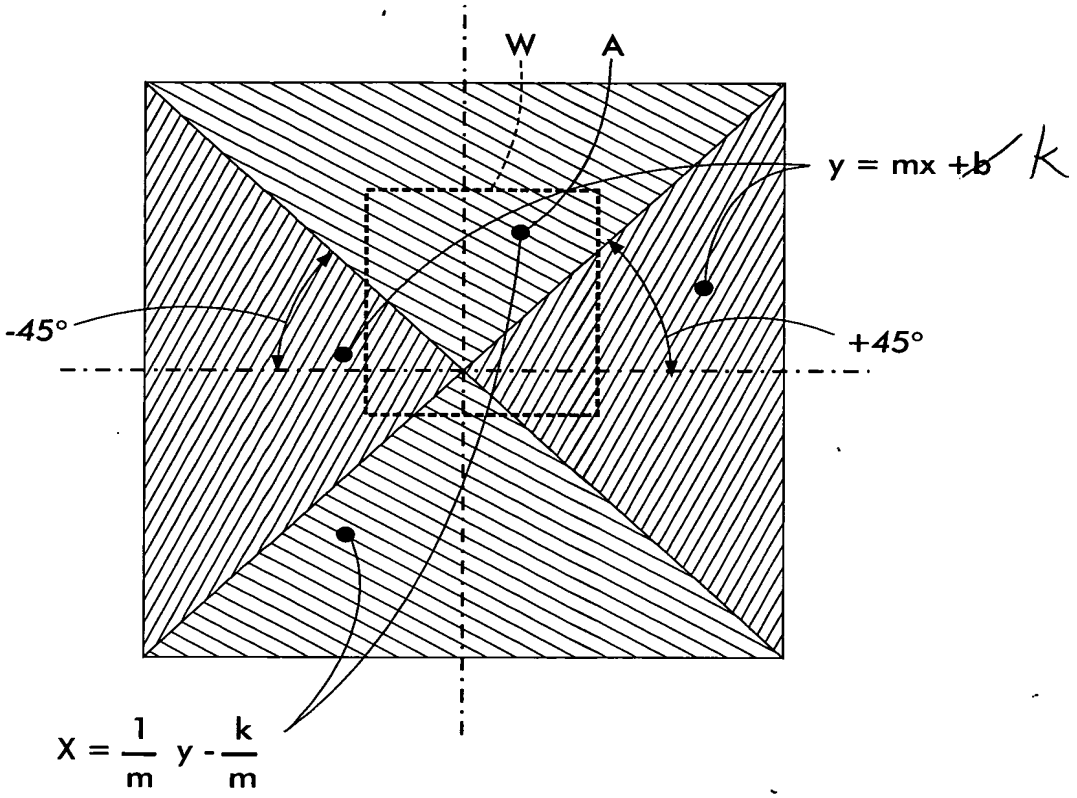

FIG. 8

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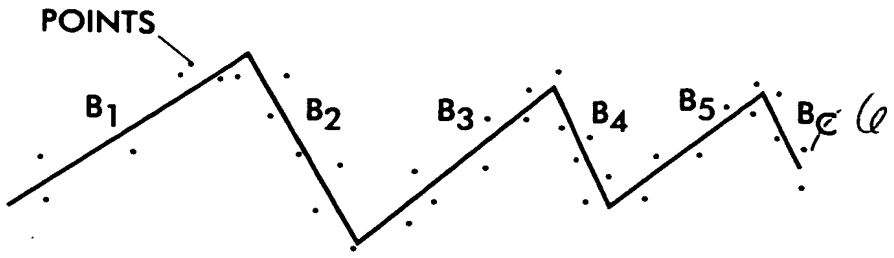

ie B6

FIG. 9

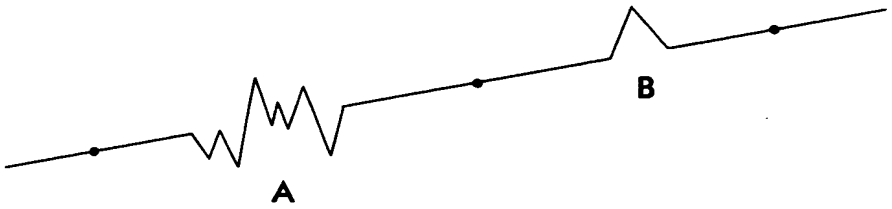

FIG. 10A

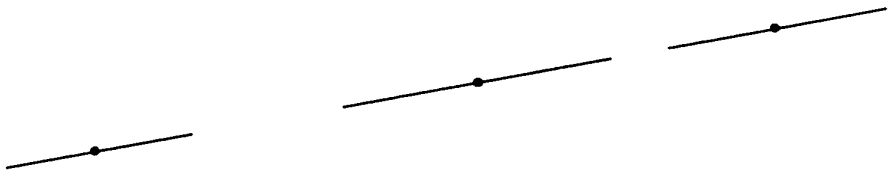

FIG. 10B

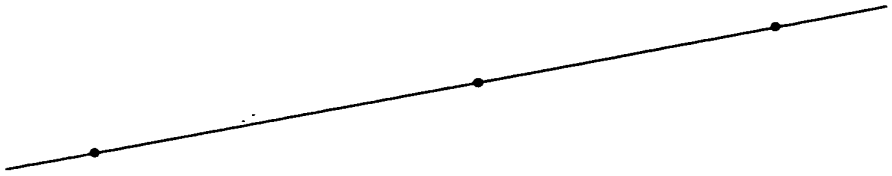

FIG. 10C